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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,125	12/26/2000	Kiyoyuki Chinzei	F0284 KWI	4997

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EXAMINER	
BINDA, GREGORY JOHN	
ART UNIT	**PAPER NUMBER**
3679	

DATE MAILED: 11/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/749,125	Applicant(s) CHINZEI, KIYOYUKI
	Examin r Greg Binda	Art Unit 3679

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *May 5 & 8 and August 18, 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *2,3,5-10,12,14 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,11,13 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 May 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed on Aug 18, 2003 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on May 5 and Aug 18, 2003 have been entered.

Election/Restrictions

3. Newly amended/submitted claims 2, 3, 5, 6, 12, 14 & 16 are directed to an invention that is independent or distinct from the invention originally claimed for the same reasons stated with regard to claims 7-10 in the Office action mailed Feb. 11, 2003.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 2, 3, 5-10, 12, 14 & 16 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

4. Applicant's traversal in Paper No. 10 of the withdrawal of claims 7-10 (and by extension claims 2, 3, 5, 6, 12, 14 & 16 is acknowledged. The traversal is on the ground(s) that:

a. The function of the invention stipulated in the preambles of the claims 1 & 4 is not distinct from the method(s) recited in the withdrawn claims. This is not found persuasive because the elected invention is a product defined by its structure and its ability to PERFORM any function recited in the claims NOT by the function itself. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

b. It is "unfair to suggest uses [for the originally elected invention] outside of the teachings of the claims to defeat the unity of invention". However, it is not at all unfair to show a product and process of using said product are distinct by showing that the product can be used in a materially different process. See MPEP § 806.05(h).

c. If the withdrawal of claims 7-10 is maintained by the examiner, then claims 1-6 should be regarded "as being directed to the same invention." However such regard would contradict the reasons for withdrawing claims 7-10.

5. The restriction requirement is still deemed proper and is therefore made FINAL.

Drawings

6. The drawings were received on May 8, 2003. These drawings have been objected to by the draftsperson as noted on the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

Specification

7. The substitute specification and abstract filed Jan 13, 2003 have been entered.

Claim Objections

8. Claims 13 & 15 are objected to because:

a. Claims 13 & 15, line 10, the limitation "from equation (1)" should be changed to "from an equation (1)"

b. Claim 13, line 16, the limitation "3D" should be written as "three-dimensional" if that is intended meaning of the limitation.

Claim Rejections - 35 USC § 112

9. Claims 11 is rejected under 35 U.S.C. 112, **first** paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, **had possession** of the claimed invention. Claim 11, lines 11 & 12 recites that the first spherical bearing/support P_1 is "capable of changing positions relative to [the second bearing P_2] along said axial rod [R]". There does not appear to be a written description of this limitation in the application as filed.

10. Claim 11 is rejected under 35 U.S.C. 112, **first** paragraph, as containing subject matter which was not described in the specification in such a way as to **enable** one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 11, lines 11 & 12 recites that the first spherical bearing/support P_1 is "capable of changing positions relative to [the second bearing P_2] along said rod [R]" and then claim 11, lines 18-20 recites that the motion of the first spherical bearing/support P_1 along the axis of rod R "is constrained". The recitations are contradictory. The specification does not teach how to make the first spherical bearing/support P_1 so that it is both movable along the axis of the rod (as

recited in claim 11, lines 11 & 12) and constrained along the axis of the rod (as recited in claim 11, lines 18-20).

11. Claims 11, 13 & 15 are rejected under 35 U.S.C. 112, **second** paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 11, lines 11 & 12 recites that the first spherical bearing/support P_1 is "capable of changing positions relative to [the second bearing P_2] along said rod [R]" and then each recites in lines 18-20 that the motion of the first spherical bearing/support P_1 along the axis of rod R "is constrained". The recitations are contradictory. How the can the first spherical bearing/support P_1 be both able to move along the axis of the rod (as recited in lines 11 & 12) and be constrained from moving along the axis of the rod (as recited in lines 18-20)?

b. Claim 13, lines 1 & 2 recites the nonsensical limitation "a (X1, Y1, Z1)". Reference characters can be used in a claim, but when a reference character is used, it is to be used in conjunction with a recited element, not in place of a recited element. See MPEP § 608.01(m).

c. Claim 13, line 8 and claim 15, line 8 recite the nonsensical limitation "changing position into (X1, Y1, Z1)"

d. Claim 13, line 10 and claim 15, line 9 recite the nonsensical limitation "changing position into (X', Y', Z')"

e. Claim 13, lines 11-14 and claim 15, lines 11-14 lack connective language tying together the equations in lines 12-14 to the respective preceding limitations. It appears

that the equations are attempting to define the means by which the points x', y' and z' are determined. Furthermore, it is unclear if the points x', y' and z' in lines 12-14 are the same as, or different from the "(X', Y', Z')" in line 8.

Claim Rejections - 35 USC § 102

12. Claims 1, 4, 11, 13 & 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al, US 5,853,328 (Kobayashi). Fig. 8 shows a link mechanism which is part of a robot arm comprising: an axial rod A; a first spherical bearing D; and a second spherical bearing B. Each of the bearings D & B is attached to the rod A. The two bearings D & B are capable of changing positions relative to each other. The motion of the first bearing D relative to the axial rod A along the axis is constrained (see fixed" in col. 1, line 21), but the first bearing D can move relative to the second bearing B because the first bearing is housed in a wheel E which imparts movement to the first bearing D relative to the second bearing B (i.e. when the wheel E travels over a bump or the tire of wheel E deflates or inflates). The second bearing B can travel along the axial rod A (see "slide-type" in col. 1, line 20) relative to the first bearing D. The position of the second bearing B and the direction of an arm C are defined by a coordinate values of the first spherical bearing D and the position of the second spherical bearing B relative to the first bearing D.

13. Claims 4 & 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Parker, US 2,124,006. Figs. 1 & 2 show a link mechanism comprising: an axial rod 24 and two supports 20, 21 & 27, the two supports being capable of changing positions. The motion of the first support 20, 21 relative to the axial rod 24 along the axis is constrained, but the first support 20, 21 can

move relative to the second support 27 because the first support is attached to a base 10 which imparts movement to the first support 20, 21 relative to the second bearing 27 (i.e. when the base 10 vibrates). The second support 27 can travel along the axial rod 24. The position of the second support 27 and the direction of an arm 64 are defined by a coordinate values of the first spherical support 20, 21 and the position of the second support 27 relative to the first support 20, 21. On page 2, col. 2, lines 15+ and in Fig. 1, the link mechanism is disclosed as part of an end effecter.

14. Claims 4 & 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hendrickson, US 1,149,762. Figs. 1-3 show a link mechanism which is part of a robot arm comprising: an axial rod 7 and two supports 6 & 9, the two supports being capable of changing positions. The motion of the first support 6 relative to the axial rod 7 along the axis is constrained, but the first support 6 can move relative to the second support 9 because the first support 6 is attached to a drum D which imparts movement to the first support 6 relative to the second bearing 9 whenever the drum D is moved. The second support 9 can travel along the axial rod 7 (see "slidably engaged" on page 1, line 83). The position of the second support 9 and the direction of an arm 14 are defined by a coordinate values of the first spherical support 6 and the position of the second support 9 relative to the first support 6.

15. Claims 1, 4, 11, 13 & 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Pritschow et al, US 5,916,328 (Pritschow). Fig. 1 shows a link mechanism K comprising: an axial rod VE and two spherical bearings P & P', the two bearings being capable of changing positions. The motion of the bearing P relative to the axial rod VE along the axis is constrained

and the other bearing P' can travel along the axial rod VE. In col. 5, lines 54-56 the link mechanism K is disclosed as part of an end effecter.

Response to Arguments

16. Applicant's arguments filed May 5, 2003 have been fully considered but they are not persuasive.

a. Applicant argues that Kobayashi does not show two spherical bearings that can travel such that one bearing is constrained on the rod and the other can slide along the rod. However, as noted in detail above, Kobayashi does show such features.

b. Applicant argues that in Parker, the "support 20" fails to support the axial rod 24. However, Figs. 1 & 2 show the first support 20, 21 supports the axial rod 24.

c. Applicant seems to argue that in Parker the axial rod 24 does not travel. However Figs. 1 & 2 show the rod 24 can slide (i.e. travel) along the base 10.

d. Applicant argues that in Parker the rod 24 cannot determine its position and direction.. However, if the position and direction of the rod 24 is not determined by its actual position and direction (like that shown in the drawings), then how would its position and direction be determined? Clearly a position and direction for a rod is determined by the rod's actual position and direction.

e. Applicant seems to argue that in Pritschow the position of the bearing P' cannot move relative to the position of the bearing P. However, in col. 5, lines 64+ Pritschow discloses that the bearing P' can move relative to the position of the bearing P.

17. Applicant's arguments filed Aug 18, 2003 have been fully considered but they are not persuasive. In response to applicant's argument that the claimed invention is patentable because it is intended to be used with a particular set of equations to determine the position of robotic equipment, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached Monday through Thursday from 9:30 am to 7:00 pm. The examiner can also be reached on alternate Fridays. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne, can be reached on (703) 308-1159. The fax phone number is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2168.

Greg Binda
Primary Examiner
Art Unit 3679